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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,017

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Eiji Takaike

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EXAMINER

GREEN, TELLY D

ART UNIT

PAPER NUMBER

2822

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,017	Applicant(s) TAKAIKE, EIJI	
	Examiner TELLY D. GREEN	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I, claims 1-12, 16 and 17 in the reply filed on May 7, 2008 is acknowledged. Claims 13-15 have been withdrawn.

Action on the merits is as follows:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1, 2 and 6** are rejected under 35 U.S.C. 102(b) as being anticipated by Ogura (**US Publication 2002/0052065 A1**).

In regards to claims **1 and 2**, Ogura disclose (**Fig. 1F**) an electronic element (**item 10**); and an interposer including an interposer base (**item 12**) to which the electronic element is joined, and a plurality of post electrodes (**item 22**) (**paragraph 102**) that are disposed inside one or more through holes formed in the interposer base and are connected to corresponding electrodes (**item 14**) of the electronic element; wherein a surface of the electronic element and a surface of the interposer base are integrated with each other by being brought into direct contact with each other, and the post electrodes are formed directly on the corresponding electrodes of the electronic element (**Fig. 1F**).

In regards to claim 6, Ogura discloses (**Fig. 1F**) wherein the post electrodes are formed in the single through hole.

Claims **1, 5, 7-12** are rejected under 35 U.S.C. 102(b) as being anticipated by Terui (**US Publication 2004/0150104 A1**).

In regards to claims 1 and 16, Terui discloses (**Figs. 2, 4, 6, 9, 12, 16, 17**) an electronic element; and an interposer (**paragraphs 71-73**) including an interposer base (**items 400, 100**), to which the electronic element (**items 400**) is joined, wherein the electronic element and the interposer are integrated with each other by being brought into direct contact with each other. and a plurality of post electrodes (**items 461-466**) connected to corresponding electrodes (**items 211, 212**) of the electronic element (**Figs. 4, 6, 12, 16**); wherein the electronic element and the interposer base are integrated with each other by being brought into direct contact with each other, and the post electrodes are formed directly on the corresponding electrodes of the electronic element (**Figs. 4, 6, 12, 16**).

In regards to claim 5, Terui discloses (**paragraphs 80-81, Figs. 2, 4, 6, 9, 12, 16, 17**) a first insulation layer is formed at least in a position on the electronic element to be joined to the interposer base; and a second insulation layer is formed at least in a position on the interposer base to be joined to the electronic element.

In regards to claim 7, Terui discloses (**Figs. 4, 6, 12, 16**) wherein a recess is formed in the interposer base such that the electronic element is accommodated in the recess.

In regards to claim 8, Terui discloses (**Figs. 4, 6, 12, 16**) wherein plural of the electronic elements (**items 211, 212, 201**) are mounted to the interposer base.

In regards to claim 9, Terui discloses (**Figs. 4, 6, 12, 16**) a back surface of

the electronic element is joined to the interposer base.

In regards to claim 10, Terui discloses (**Figs. 4, 6, 12, 16**) a sealing resin (**item 450**) encapsulating the electronic element is disposed on the interposer base.

In regards to claim 11, Terui discloses (**Figs. 4, 6, 12, 16**) the electronic element is a semiconductor chip (**item 401**).

In regards to claim 12, Terui discloses (**Figs. 4, 6, 12, 16**) wherein the electronic element is a passive element (**paragraph 76**).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **3 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terui (**US Publication 2004/0150104 A1**).

In regards to claims 3 and 4, Terui does not specifically disclose the electronic element and the interposer are made of the same material or silicon.

However it would have been obvious to modify the invention to include electronic element and the interposer that are made of the same material or silicon for the purpose of manufacturing cost, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use (In re Leshin, 125 USPQ 416).

4. Claim **17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Terui **(US Publication 2004/0150104 A1)** in view of Chakravorty et al. (Chakravorty) **(US Publication 2003/0185484 A1)**.

In regards to claims 3 and 4, Terui does not specifically disclose wherein the electronic element is an optical device; and the interposer is provided with an optical waveguide optically connected to the optical device.

Chakravorty discloses wherein the electronic element is an optical device; and the interposer is provided with an optical waveguide optically connected to the optical device **(Abstract, paragraphs 11-14)**.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings above for the purpose of optical and electrical functionality.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention.

Yamane et al. (US Publication 2004/0070064 A1)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TELLY D. GREEN whose telephone number is (571)270-3204. The examiner can normally be reached on Monday thru Friday 7:30 AM - 5:00 PM EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Telly D Green/
Examiner, Art Unit 2822
July 6, 2008

/Kiesha L. Rose/

Primary Examiner, Art Unit 2822